Nursing performance in the prevention of pressure injuries in Intensive Care Units

https://doi.org/10.56238/levv15n39-161

Danivia Maria dos Santos[1], Adriane Zanon[2], Simone Konzen Ritter[3], Isadora dos Santos Moreira[4], Vanessa Menezes Catalan[5].

ABSTRACT

Introduction: The prevention of pressure injuries in the Intensive Care Unit is essential to reduce patient complications and minimize the length of hospital stay. It is up to the nurse to evaluate, prescribe preventive care and train the nursing team. Objective: To investigate the role of the nursing team in the prevention of pressure injuries in patients admitted to the Intensive Care Unit. Methods: This is an integrative literature review, with scientific articles available in full, published in Brazil, in the last five years, in the BDENF, LILACS and SCIELO databases. Results: A total of 71 scientific articles were found, of which 11 articles were included. The nurse's work encompasses the following nursing care to prevent pressure injuries: physical examination of the patient's skin, use of risk prediction scales, changes in decubitus and support of bone prominences. The findings show that the nursing team's knowledge about the prevention of pressure injuries is insufficient, and the nurse has the role of keeping the team trained. Final Considerations: It is necessary to have permanent education of nursing team professionals, which is strategic for the prevention of pressure injuries in the Intensive Care Unit.

Keywords: Nursing, Nursing Care, Pressure Ulcer, Intensive Care Units.

[1] Nurse Graduated from Faculdade Factum
[2] Master in Health Sciences (Cardiology) from the Institute of Cardiology of Rio Grande do Sul Professor at the Faculty of Factum
[3] Master in Nursing from the Federal University of Rio Grande do Sul
Risk Management Nurse at Grupo Hospitalar Conceição
[4] Nursing Student at Faculdade Factum
Risk Management Nursing Intern at Grupo Hospitalar Conceição
[5] Master in Nursing from the Federal University of Rio Grande do Sul
Risk Management Coordinator at Grupo Hospitalar Conceição

INTRODUCTION

Pressure ulcers or lesions (PPL) are lesions located on the skin and/or underlying tissue, usually over a bony prominence, resulting from pressure alone or combined with shear. These lesions may occur in patients hospitalized in Intensive Care Units (ICU) due to the long stay of patients in these areas, which may impair positive treatment results, due to the pain caused by these lesions and possible infections (FELISBERTO; TAKASHI, 2022).

Although the pressure exerted on more prominent areas of the body or areas with less subcutaneous tissue – for example: heels, hips, ankles and sacrum – on a hard surface is considered a significant risk factor for the occurrence of PPL, we should also report the shear forces, when the patient slips out of bed, deforming and destroying the tissues; and friction, when the patient is dragged to move him in bed or pull him out of bed (GONÇALVES et al., 2020).

PPL has a multifactorial origin, as it develops due to intrinsic factors (mental and nutritional status, advanced age, urinary incontinence, edema, sensory disorders, hydration, hypotension, excessive involuntary motor skills, level of consciousness, tissue hypoperfusion, muscle tone); or external to the patient (pressure, friction, shear, fixation and moisture of the skin). Preventive actions, therefore, require the involvement of the multidisciplinary team (GONÇALVES et al., 2020).

PPL is one of the most prevalent and incident adverse events in the ICU, with incidence rates ranging from 8.8 to 25.1% worldwide. National studies reveal incidence rates between 13.6 and 59.5% (ALI et al., 2020).

However, to prevent the occurrence of PPL, nurses need to evaluate patients systematically, with internationally available tools, such as the Braden Scale. The Braden score is intended to identify patients who are likely to develop PPL. It consists of six subscales that include sensory perception, skin moisture, nutritional status, activity levels, mobility, and exposure to friction and shear. The total score results in values from 6 to 23, and the lower the score, the higher the risk of developing PPL (SOARES; HEIDEMANN, 2018).

Currently, LPP can be classified by stages. The classification system adheres to the following definitions: first stage - intact skin with erythema without pallor; second stage - partial loss of skin thickness; stage three - loss of all skin thickness; stage four – complete loss of skin and tissue; Unclassifiable - complete loss of skin thickness and no visible tissue loss, deep tissue of persistent dark red, brown, or purple coloration. Two additional descriptions are also included: PPL related to medical devices and PPL in mucous membranes (FERREIRA et al., 2018).

The nurse is an integral part of the multidisciplinary team, leading the nursing team and managing care, responsible for decision-making that enables the selection of the best care practices for hospitalized patients, to obtain quality care. To ensure the quality of care, scientific knowledge about LPP is necessary, in order to optimize the available human resources and reduce the costs of

the institutions. However, several studies indicate that nursing knowledge about treatment and prevention recommendations is still insufficient, despite the technical-scientific advances in the health area and the existence of protocols and guidelines for this care practice (SOUSA; FAUSTINO, 2019).

In this context, this study aims to investigate the role of the nursing team in the prevention of pressure injuries in patients hospitalized in the Intensive Care Unit, with emphasis on the contribution and importance of the nurse.

METHODS

This is an Integrative Literature Review. Due to its methodological approach, the integrative review allows the inclusion of diverse methods, which have the potential to play an important role in evidence-based practice in nursing. In addition, the integrative literature review has the ability to synthesize results on a given topic or issue in a clear and simple way, which favors the synthesis of the best scientific evidence available in the literature (DANTAS et al, 2021).

It is noteworthy that the choice of this methodology allows the survey of theoretical references already analyzed on the aspects involved regarding the main variables related to the role of the nursing team in the care to prevent pressure injuries in patients hospitalized in the Intensive Care Unit, with emphasis on the contribution and importance of the nurse, which is the guiding issue of this study.

Data collection was carried out in the BDENF, LILACS and SCIELO databases, using the descriptors available in the Health Sciences Descriptors (DeCS): "Nurses AND Nursing Care AND Pressure Injury OR Pressure Ulcer AND Intensive Care Units". The titles and abstracts of the articles found were read and, afterwards, the articles that corresponded to the inclusion criteria were read and carefully analyzed in full.

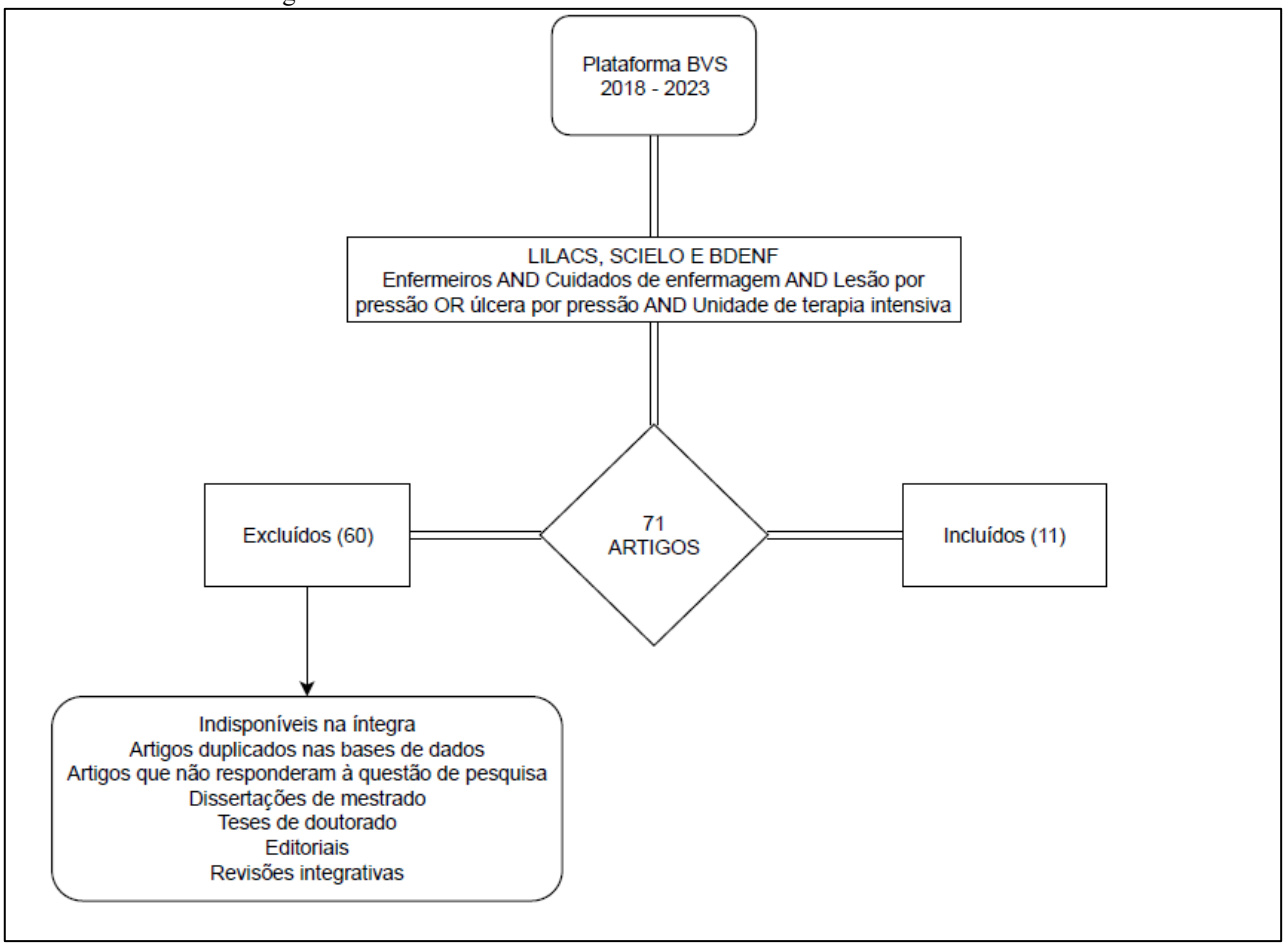
The inclusion criteria for the study were: scientific articles corresponding to the topic under study, in Portuguese, published between the years 2018 and 2023. Scientific articles that were not available in full, duplicate articles in databases, articles that did not answer the research question, master's dissertations, doctoral theses, editorials, and integrative reviews were excluded from the study.

It is noteworthy that the study met the ethical precepts, through the proper reference to the works used, maintaining the original idea of the authors as recommended by the Brazilian Association of Technical Standards (ABNT). Copyright was preserved in accordance with Law No. 12,853, of August 2013 (BRASIL, 2013).

RESULTS

Only scientific articles that demonstrated similarities with the central theme of the research and that were published in Brazilian health journals were selected for this study. First, a pre-selection of the articles was carried out, according to the reading of the abstracts, seeking a relationship between the content, title, abstract and the objective of the present study. Studies that did not meet the inclusion criteria were excluded, as shown in Figure 1.

Figure 1 – Flowchart of the search of scientific articles in the databases.



In the present study, 71 articles were found in the three databases consulted. In order to answer the guiding question, considering the inclusion and exclusion criteria of the study, 11 publications were included, which will be discussed in full. Table 1 presents the publications included in the integrative review.

Table 1 – Distribution of publications included in the integrative review according to title, journal, Qualis, level of evidence, authors, year and main results (To be continued)

Title	Newspaper	Qualis	Level of evidence	Authors /Year	Main results
Nurses' role in the prevention and	Sena Aires Scientific	B1	3B	Felisberto and	Nursing care encompasses interventions related to the

care of patients with pressure ulcers in the intensive care unit.	Dissemination Magazine			Takashi 2022	comprehensive follow-up of the patient, through the use of risk prediction scales and knowledge of risk factors.

Table 1 - Distribution of publications included in the integrative review according to title, journal, Qualis, level of evidence, authors, year and main results (To be continued)

Educational intervention on pressure injury prevention: experience report.	Nursing in Focus Journal	B1	4C	Albuquerque et al. 2022	The educational intervention on pressure injury prevention in intensive care contributed to significant learning.
Prevention of pressure injuries in the pronation of Covid-19 patients: construction of a graphic narrative.	Estima – Brazilian Journal of Stomatherapy	B1	2C	Soldera et al. 2022	The main care was: skin evaluation; Keeping the skin clean and hydrated; using pressure redistribution devices; using silicone foams, clear films, barrier-forming spray, and silicone on bony prominences, under medical devices, and on the face, and repositioning the patient every two hours.

Table 1 - Distribution of publications included in the integrative review according to title, journal, Qualis, level of evidence, authors, year and main results (To be continued)

Evaluation of the knowledge of nursing professionals in the prevention of pressure injuries in therapy Intensive.	Anna Nery School Magazine	B1	3B	Araújo et al. 2022	The professionals evaluated demonstrated levels of effective knowledge and low divergence between the categories, showing that they are trained and prepared, having mastery of factors related to the evaluation, prevention and classification of pressure injuries in intensive care.
Medical device-related pressure injuries in the clinical practice of nurses.	Nursing in Focus Journal	B1	4	Soldera et al. 2021	Half of the nurses interviewed presented weaknesses in their knowledge about PPL related to medical devices. Among the care listed, the following stand out: daily inspection of the skin during physical examination once a day or inspection of

					the skin during complications related to pain/discomfort.

Table 1 - Distribution of publications included in the integrative review according to title, journal, Qualis, level of evidence, authors, year and main results (To be continued)

Quality of care in an intensive care unit for pressure injury prevention.	Estima – Brazilian Journal of Stomatherapy	B1	4C	Rebouças et al. 2020	Scarce good practices for the prevention of pressure injuries were identified, which implies poor and unsafe care. It is urgent to plan and implement improvement strategies.
Prevention of pressure injuries in patients in intensive care units.	UERJ Nursing Journal	A4	3B	Ferreira et al. 2021	The level of knowledge of the nurses proved to be insufficient. The main influencing factors were: age, years of professional experience, education, and training in the area of pressure injuries.
Nurses' perception of care and the use of hydrogel in pressure ulcers.	Revista Enfermería Actual de Costa Rica	B1	4C	Coast et al. 2020	The study revealed the fragility of nurses' knowledge regarding PPL and the application of hydrogel. The need for continuing education was observed, with the objective of reducing the limitations of knowledge regarding the concept, classification and causes of pressure injuries, as well as the use of hydrogel.

Table 1 - Distribution of publications included in the integrative review according to title, journal, Qualis, level of evidence, authors, year and main results (Conclusion)

Pressure Injury: Measures therapies used by nursing professionals.	Brazilian Journal of Health Sciences	B3	4C	Correia and Santos 2019	The care provided by the nursing team was the evaluation of the patients' skin at admission, and bed bathing was mentioned as the best time to perform this care. To assess the risk of developing PPL, most nurses reported using the Braden Scale.
Nurses' interventions in the prevention of pressure injuries in an intensive care unit.	UFSM Nursing Journal	B1	4C	Manganelli et al. 2019	The most frequent care was mobility assessment and physical examination at admission. As prevention, the nurses prescribed the maintenance of hydrated skin, alternation of decubitus, body hygiene and the use of a pyramidal mattress.
Prevention of Pressure Injury: Prescribed actions by nurses from therapy centers Intensive.	Text & Context Nursing Journal	A3	4C	Marie et al. 2018	The absence of pressure injuries was associated with change of decubitus, application of hydrocolloid dressing in the sacral region, performance of external hygiene and skin inspection.

The findings allowed us to list two categories: "Actions, resources and strategies to prevent pressure injuries" and "Challenges of education and permanent qualification of nursing teams", which will be presented in the discussion of this study.

DISCUSSION

ACTIONS, RESOURCES AND STRATEGIES TO PREVENT PRESSURE INJURIES

The prevention of PPL is an essential role of nursing professionals, in view of the care that includes interventions related to the comprehensive follow-up of patients at risk of acquiring the lesion, through the use of risk prediction scales and knowledge of risk factors (FELISBERTO; TAKASHI, 2022).

A study conducted with nurses from the adult ICU of a hospital in Rio Grande do Sul, investigated the strategies implemented by nurses for the prevention of PPL. It was found that the physical examination at patient admission, assessment of locomotor activity and mobility, the application of the Braden Scale, and daily inspection of the patients' skin were the most frequent care (MANGANELLI et al., 2019).

Regarding the relevance of the physical examination at patient admission, another study showed that 81.8% of the nurses performed the patient's skin examination at admission, considering it as a priority care for the patient in identifying potential risks for the development of PPL. It is important to highlight that 72% of the professionals used the Braden Scale to classify the risks in the patient's hospitalization, however only 63% maintained a regularity in the application of the tool that assesses such risks, highlighting the need to find strategies in order to improve good practices for the prevention of PPL (REBOUÇAS et al., 2021).

It is understood that the application of the Braden Scale is a tool that helps nurses in the identification, risk classification and prevention of PPL. However, it was found that of the 84 patients admitted to an ICU in the state of Acre, only 36.9% of them were classified as to the risk of PPL, using the Braden Scale. Considering that patients with neurological impairment are more susceptible to developing such lesions, due to mobilization difficulties, the use of instruments that assess risks is highly recommended (CACIANO et al., 2020).

The need to know the risk parameters for PPL is highlighted, through the use of the Braden Scale, created by Braden and Bergstrom (1987), as part of an initiative to reduce the incidence and prevalence of PPL. The instrument has six dimensions: sensory perception, humidity, activity, mobility, nutrition, friction and shear, and four classifications, which, based on the sum of the dimensions evaluated, allow the evaluation of the patient's degree of risk of developing PPL, according to the scores: low risk (15 to 18); moderate (13 to 14); high (10 to 12); very high (≤ 9 points) (PEREIRA; NOGUEIRA, 2020).

According to the scientific literature, the most frequent care performed by the nursing team was the evaluation of the patients' skin at admission using tools such as the Braden Scale, in order to assess risk factors for the development of pressure injuries early (SOLDERA et al., 2022; CORREIA and SANTOS, 2019; MANGANELLI et al., 2019; MENDONÇA et al., 2018).

It is up to the nurse to prescribe nursing care aimed at reducing the risks of harm due to PPL. Regarding nursing prescription, the change of decubitus at two-hour intervals was the main evidence found in a study carried out in two hospital institutions linked to the Unified Health System. The sample of 104 participants from both institutions considered the change of decubitus as one of the main preventive measures for PPL, emphasizing that the repositioning of individuals at risk should be performed, as it promotes pressure redistribution, especially in areas of bone convexity; it should not be performed in case of contraindications, such as hemodynamic instability and surgical positioning. In the ICU, periodic repositioning should be supervised by a nurse, with records in the medical record established as a guarantee of the care provided (MENDONÇA et al., 2018).

In accordance with the care protocols, a recently published study highlights the importance of evaluating and adapting the support surface to the skin, with the use of cushions and pillows, at the main pressure points. In this study, the main evidence pointed to the importance of cleaning and moisturizing the skin, as humidity causes soaking of the tissues, which increases the risk of PPL. As for cleaning, it is recommended to use shower gel with a slightly acidic pH, close to the physiological pH of the skin, as other soaps and disinfectants are not recommended due to the risk of skin irritation and dryness. Regarding humidity, extreme care is emphasized with patients with urinary incontinence (urine and/or feces), exudative lesions, permeable stoma, among other situations (SOLDERA et al., 2022).

Based on the findings found in the present study, it is evident that the physical examination of the skin becomes the most essential care, and should be performed at the patient's admission and daily, especially under regions of bony prominences, followed by the use of risk assessment scales, such as the Braden Scale, as it is a priority tool for the prevention of PPL in the Intensive Care Unit.

CHALLENGES OF EDUCATION AND PERMANENT QUALIFICATION OF NURSING TEAMS

Nurses play an indispensable role in the education and qualification of the professionals in their team, who need to have up-to-date knowledge in their care practice. However, training in-service professionals is a challenge for managers, due to the difficulties of staffing. In this context, a study published in the Brazilian reality highlights the nurse as a multiplying agent of knowledge, who should innovate in educational methods to promote the construction of an evaluation culture guided by an educational paradigm, which advocates a continuous look at improving the service

provided to critically ill patients who are exposed to developing PPL (ALBUQUERQUE et al., 2022).

Regarding the qualification of nursing professionals, one study indicated that the level of knowledge of nurses is insufficient in relation to the prevention of PPL and the main collaborative variables were education/education and training in the area of PPL. The authors reinforce that there is a need to regularly assess the level of knowledge of the nursing team about the prevention of PPL, in order to promote practice based on scientific evidence (FERREIRA et al., 2021).

These findings corroborate another study carried out in a public hospital in Paraíba, whose objective was to know the perceptions of nurses about the use of hydrogel in pressure ulcers. The sample consisted of 17 ICU nurses, who answered questions about knowledge about PPL, treatment and prevention inputs. The evidence showed that most nurses had difficulties in describing and classifying injuries, which is considered a worrying factor, as it is essential to have a scientific basis on the classification of injuries for adequate planning of prevention and treatment of injuries (COSTA et al., 2020).

Regarding the relevance of specific systematic training in the area of PPL, a Brazilian study analyzed the knowledge of nursing professionals about the assessment, prevention and classification of PPL. It was observed that of the sample of 50 professionals, 34% did not obtain the desired average above 90% of correct answers. Items related to risk assessment, skin assessment, skin care, repositioning, and support surface had the lowest scores. It is noteworthy that nursing technicians were the category that presented the greatest failure to achieve the goal (ARAÚJO et al., 2022).

In this context, the continuing education of nursing team professionals is essential for the knowledge of PPL prevention measures. From the in-service training, the team keeps up to date on the most relevant topics to promote quality care, ensuring the execution of procedures safely and efficiently. In this sense, continuing education brings a great personal and professional benefit, providing self-esteem and growth for professionals, the result of which is a differential for the patients who are cared for, receiving even more specialized care based on scientific evidence (RIBEIRO et al., 2019).

STUDY LIMITATIONS

It was identified as a limitation of the study that most of the scientific articles included in the sample are of cross-sectional methodology, which denotes a less relevant level of scientific evidence, making it necessary to produce studies with levels of scientific evidence of greater impact, with the inclusion of systematic reviews.

CONTRIBUTIONS TO PRACTICE

The present integrative review provided the synthesis of the best scientific evidence available in the Brazilian literature on the role of the nursing team in the prevention of pressure injuries in patients hospitalized in the Intensive Care Unit, which contributes to professional practice and patient safety. In addition, this study showed that knowledge related to the prevention of pressure injuries in the context of Intensive Care Units is insufficient, with a scarcity of studies published in the Brazilian reality.

FINAL CONSIDERATIONS

The prevention of PPL in ICU patients has always been a major concern for the nursing team, due to the little or no mobility of patients hospitalized in this unit. Through this study, it was possible to identify the main actions and resources used by the nursing team to prevent pressure injuries, highlighting the physical examination of the skin at patient admission, followed by the use of the Braden Scale, as fundamental care. It is the nurse's responsibility to prescribe care and prevention protocols for all patients admitted to the institution, in order to improve quality and patient safety indicators, and reduce morbidity and mortality.

Regarding the challenges of education and permanent qualification of nursing teams, it is understood that there is a weakness in the professionals' knowledge about the prevention of pressure injuries in the ICU. It was evidenced that nurses need to innovate in educational methods in order to ensure that their team is trained to prevent PPL, highlighting in-service training as the main challenge, due to the difficulties in staffing.

Based on the findings of the present study, it can be inferred that in order to promote the commitment of the care team to the protocols for the prevention of pressure injuries, in order to ensure safe and quality care for patients, it is necessary to permanently educate the professionals of the nursing team, which is strategic in the prevention of pressure injuries.

REFERENCES

Albuquerque, A. M. de, et al. (2022). Intervenção educativa sobre prevenção de lesão por pressão: Relato de experiência. Enferm. foco, 1-6. https://doi.org/10.21675/2357-707X.2022.v13.e-202239ESP1

Ali, Y. C. M. M., et al. (2020). Incidência de lesão por pressão e tempo de assistência de enfermagem em terapia intensiva. Estima, 18. https://doi.org/10.30886/estima.v18.849_PT

Araújo, C. A. F. de, et al. (2022). Avaliação do conhecimento dos profissionais de Enfermagem na prevenção da lesão por pressão na terapia intensiva. Escola Anna Nery, 26. https://doi.org/10.1590/2177-9465-EAN-2021-0200

Brasil. (2013). Lei nº 9.610, de 19 de fevereiro de 1998. Altera, atualiza e consolida a legislação sobre direitos autorais e dá outras providências. Brasília, DF: Presidência da República. https://www12.senado.leg.br/institucional/biblioteca/contato/pdf/lei-de-direitos-autorais

Caciano, K. R. P. da S., et al. (2020). Nursing interventions for neurocritical patients: Intervenções de enfermagem para pacientes neurocríticos. J Nurs UFPE, 14, e243847. https://doi.org/10.5205/1981-8963.20120243847

Correia, A. de S. B., & Santos, I. B. da C. (2019). Lesão por pressão: Medidas terapêuticas utilizadas por profissionais de enfermagem. RBCS, 23(1), 33-42. https://doi.org/10.22478/ufpb.2317-6032.2019v23n1.36793

Costa, I. M. B., et al. (2020). Percepção de enfermeiros acerca dos cuidados e a utilização de hidrogel em lesões por pressão. Enfermería Actual de Costa Rica, 39, 38-50. https://doi.org/10.15517/revenf.v0i39.39530

Dantas, H. L. L., et al. (2021). Como elaborar uma revisão integrativa: Sistematização do método científico. Revista Recien, 12(37), 334-345. https://doi.org/10.24276/rrecien2022.12.37.334-345

Felisberto, M. P., & Takashi, M. H. (2022). Atuação do enfermeiro na prevenção e cuidado ao paciente com úlcera por pressão na unidade de terapia intensiva. Revista de Divulgação Científica Sena Aires, 11(1), 42-47. http://dx.doi.org/10.36239/revisa.v11.n1.p42a47

Ferreira, P. A. C., et al. (2021). Prevenção de lesões por pressão nos doentes em unidades de cuidados intensivos. Revista Enfermagem UERJ, 29(1), 55832. https://doi.org/10.12957/reuerj.2021.55832

Ferreira, T. M. C., et al. (2018). Conhecimento de enfermeiros sobre o uso da colagenase em lesões por pressão. Rev. enferm. UFPE, 128-136.

Gil, A. C. (2021). Como elaborar projetos de pesquisa (6th ed.). São Paulo: Atlas. https://doi.org/10.5205/1981-8963-v12i1a23190p128-136-2018

Gonçalves, A. D. C., et al. (2020). A mudança de decúbito na prevenção de lesão por pressão em pacientes na terapia intensiva. Nursing, São Paulo, 23(265), 4151-4170. https://doi.org/10.36489/nursing.2020v23i265p4151-4170

Jesus, E. P., & Nogueira, M. S. (2020). Atuação do enfermeiro na prevenção da lesão por pressão em pacientes acamados: Revisão de literatura. Revista Eletrônica Acervo Saúde, 49, e3332. https://doi.org/10.25248/reas.e3332.2020

Manganelli, R. R., et al. (2019). Intervenções de enfermeiros na prevenção de lesão por pressão em uma unidade de terapia intensiva. Revista de Enfermagem da UFSM, 9(41), 1-21. https://doi.org/10.5902/2179769233881

Mendonça, P. K., et al. (2018). Prevenção de lesão por pressão: Ações prescritas por enfermeiros de centros de terapia intensiva. Texto & Contexto-Enfermagem, 27. https://doi.org/10.1590/0104-07072018004610017

Rebouças, R. O., et al. (2021). Qualidade da assistência em uma unidade de terapia intensiva para prevenção de lesão por pressão. Estima–Brazilian Journal of Enterostomal Therapy, 18. https://doi.org/10.30886/estima.v18.947_PT

Ribeiro, B. C. O., Souza, R. G., & Silva, R. M. (2019). A importância da educação continuada e educação permanente em unidade de terapia intensiva: Revisão de literatura. Revista de Iniciação Científica e Extensão, 2(3), 167-175. [URL unavailable]

Soares, C. F., & Heidemann, I. T. S. B. (2018). Promoção da saúde e prevenção da lesão por pressão: Expectativas do enfermeiro da atenção primária. Texto & Contexto-Enfermagem, 27(2), e1630016. https://doi.org/10.1590/0104-070720180001630016

Soldiera, D., et al. (2022). Prevenção de lesões por pressão na pronação de pacientes Covid-19: Construção de uma narrativa gráfica. Estima–Revista Brasileira de Estomaterapia, 19. https://doi.org/10.30886/estima.v19.1136_IN

Soldiera, D., et al. (2021). Lesões por pressão relacionadas a dispositivos médicos na prática clínica de enfermeiros. Enfermagem em Foco, 12(2). https://doi.org/10.21675/2357-707X.2021.v12.n2.3427

Sousa, R. C. de, & Faustino, A. M. (2019). Conhecimento de enfermeiros sobre prevenção e cuidados de lesão por pressão. Rev. pesqui. cuid. fundam., 992-997. https://doi.org/10.9789/2175-5361.2019.v11i4.992-9